Poster Session 10: Functional Urology, Reconstructive Urology (Part 2)
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MP 10.1
Characterizing mental health and central pain sensitization in gender-affirming vaginoplasty: Outcomes of the first year

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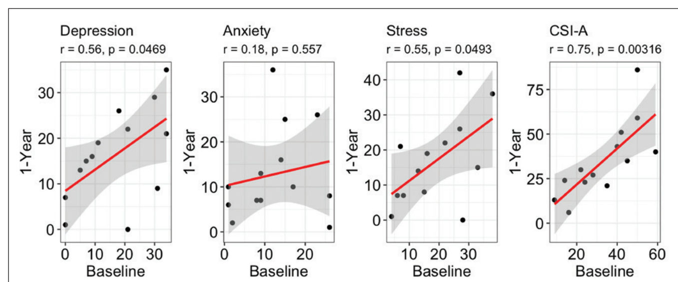
Introduction: Penile inversion vaginoplasty (PIV) is the most common gender-affirming genital surgery. Although there is a high prevalence of mental health comorbidities among trans- and gender-diverse people, there is limited research on the associations with surgical recovery. This pilot study investigated prevalence and changes in depression, anxiety, stress, and central sensitization (CS) symptoms in the first year post-PIV, and their associations with postoperative outcomes.

Methods: We conducted a retrospective cohort of 20 PIV patients who completed the Depression Anxiety Stress Scale (DASS-21) and the CS Inventory, Part A (CSI-A) prior to surgery and at one year. Postoperative outcomes throughout the first year were abstracted from the charts. Associations were tested with correlation and multivariable regression models.

Results: Preoperatively, 56% of patients screened positive for symptoms of depression, 61% for anxiety, 44% for stress, and 37% for CS. Domains were strongly intercorrelated. At one year, depression ($R=0.56$, $p<0.05$), stress ($R=0.55$, $p<0.05$), and CSI-A ($R=0.75$, $p<0.004$) scores showed correlations with preoperative values, indicating longitudinal stability (Figure 1). Early complications were minor (95% Clavien-Dindo I–II), with one grade III event. Preoperative DASS and CSI-A ($p<0.05$) were associated with greater pain and opioid use on day 14. At one year, mean vaginal depth was 11.43 cm (range 8.9–12.7, SD 1.52), and mean dilator diameter was 3.4 cm (range 2.5–3.8, SD 0.47); 33% required surgical revision, 11% had vaginal stenosis, 17% reported mental health challenges, and 21% had provoked pelvic pain. No associations were found between preoperative measures and outcomes at one year.

Conclusions: In patients undergoing PIV, mental health and central sensitization symptoms were common, intercorrelated, and generally demonstrated longitudinal stability at one year. Associations with short-term pain were seen, but not longer-term outcomes.

Acknowledgements: This abstract was presented as an interactive poster at the AUA 2026 Annual Meeting.



MP 10.1. Figure 1. Linear regression analysis. Positive correlations ($p < 0.05$) between preoperative and 1-year scores of depression, stress, and central sensitization (CSI-A) represent longitudinal stability of these comorbidities.

MP 10.2
Urogenital infection and colonization hazard associated with diver drysuit P-valves

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Introduction: Diving drysuits may have urine elimination devices (P-valves) that connect through tubes to condom catheters in males and urogenital cups in females. Inadequate cleaning may result in bacterial growth and urogenital infection risk. We characterized the resident microbial flora found.

Methods: Experienced divers with P-valves installed in their personal drysuits were recruited at dive sites in Quebec. P-valve use, cleaning practices, and samples from P-valve hoses were collected. Laboratory cultures employed a standard protocol for indwelling catheter assessment. Differences were assessed with two-tailed Fisher exact tests (FET). Significance was accepted at $p<0.05$.

Results: Sixty-seven divers participated (53 male; 14 female; 49±9 [mean±SD] years of age). Thirty-two cultures (48%) were negative; 22 (33%) showed colonization with at least one human uropathogen; and 13 (19%) showed colonization with clinically unimportant bacteria. There was no sex difference in the rate of uropathogens vs. no uropathogens found (FET 1.00). Positive cultures identified 1–7 species per individual sample. Sixteen different uropathogens were identified, including P. aeruginosa and E. faecalis. One female participant had a culture showing K. pneumonia resistant to all 16 antibiotics it was tested against. Eleven divers (16%) reported a history of urinary tract infections (UTI): seven only prior to using a P-valve, and four both prior to and after initiating P-valve use.

Conclusions: Colonization of diving drysuit P-valves by uropathogenic and non-uropathogenic microorganisms does occur. A direct association between colonization and UTI risk was not evident in our modest sample but the presence of potentially pathogenic organisms in direct contact with the urinary system underscores the need for appropriate hygiene. Taking cultures from divers presenting with UTI symptoms and a recent history of using P-valves may be reasonable before empirical treatment.

Acknowledgements: This material is based upon work supported by the Divers Alert Network under Grant No. 4076.

MP 10.3
Sclerotherapy as an alternative to hydrocelectomy in the management of hydroceles: A retrospective cohort study

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Introduction: Hydrocele is the accumulation of serous fluid within the tunica vaginalis, resulting in a fluid-filled scrotal sac. While hydrocelectomy is the management gold standard, it presents various risks. Sclerotherapy is a less invasive alternative; however, its efficacy and safety as an alternative to hydrocelectomy

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have not been thoroughly elucidated in present literature. This study aimed to evaluate the efficacy and safety of sclerotherapy for hydroceles at a high-volume institution and to identify factors predicting treatment success/complications.
Methods: A retrospective cohort study assessed 118 male patients (mean age 63.2±13.9 years) who underwent sclerotherapy for hydrocele at our institution between January 2020 and January 2025. Inclusion criteria were a hydrocele diagnosis and completion of sclerotherapy at our center; exclusion criteria was prior hydrocelectomy. Patient demographics, comorbidities, procedural details, and outcomes were analyzed.
Results: The overall recurrence rate after initial sclerotherapy was 38.9%. Predictors of recurrence included bilateral hydroceles (OR 3.14, p=0.027), inguinal hernias (OR 2.70, p=0.048), volume of fluid aspirated (OR 1.002/cc, p=0.026), and post-procedural complications (OR 2.53, p=0.032) (Table 1). Conscious sedation was associated with a lower risk of recurrence than local anesthesia alone (OR 0.41, p=0.045). Notably, sclerosant type and form (foam vs. liquid) were not significantly associated with recurrence. The overall complication rate was 25.4% — solely Clavien-Dindo grade I events. Current smoking was a strong predictor of complications (OR 15.3, p=0.015). The conversion rate to hydrocelectomy was 4.2%.
Conclusions: Sclerotherapy is an effective non-surgical approach to hydrocele management, with its efficacy and safety strongly influenced by patient factors (bilaterality, comorbidities, smoking) and procedural factors (sedation), rather than sclerosant formulation. These findings provide valuable nuance to the use of sclerotherapy as an alternative to hydrocelectomy and provide a blueprint for patient selection and counseling.
Acknowledgements: The authors would like to thank St. Joseph's Hospital, the McMaster Urology Department, the McMaster Radiology Department, and HiREB for their contribution and support towards this study.

MP 10.3. Table 1. Key patient and procedural factors and their association with recurrence and postoperative complications following initial sclerotherapy of hydrocele

Factor	Analysis	Odds ratio	95% CI	p	Association
Recurrence (overall rate: 38.9%)					
Bilateral hydrocele	Logistic regression	3.14	1.14–8.66	0.027	Significant predictor
History of hernia	Logistic regression	2.70	1.01–7.22	0.048	Significant predictor
Post-procedural complication	Logistic regression	2.53	1.08–5.91	0.032	Significant Predictor
Volume of fluid aspirated (per 1cc)	Logistic regression	1.002	1.000–1.004	0.026	Significant predictor
Conscious sedation (vs. local only)	Chi-squared test	0.41	0.17–0.98	0.045	Protective factor
STS sclerosant form (foam vs. liquid)	Chi-squared test	N/A	0.60–5.13	0.895	Not significant
STS sclerosant volume	Logistic regression	1.037	0.97–1.11	0.279	Not significant
Complications (overall rate: 25.4%)					
Current smoker	Logistic regression	15.3	1.70–138.2	0.015	Significant predictor
Sclerosant volume	Logistic regression	0.936	0.60–5.13	0.091	Not significant

MP 10.4
Increased incidence of necrotizing fasciitis in Newfoundland and Labrador

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Introduction: Necrotizing fasciitis (NF) is a rapidly destructive infection associated with severe patient morbidity and high mortality. Since the COVID-19 pandemic, physicians at our local tertiary care center have noticed an exceptionally high volume of NF cases. We tracked the incidence of NF over the last decade to identify the increased impact of this disease.
Methods: Retrospective chart review was conducted on all cases of NF between January 1, 2015, and August 1, 2025, at the Health Sciences Center, St. John's, NL. Cases were identified by operative codes. Patients were categorized into three cohorts: pre-pandemic (prior to March 31, 2020), pandemic (April 1, 2020, to February 28, 2022), and post-pandemic (March 1, 2022, to August 1, 2025) as denoted by implementation of health restrictions by our provincial government. Incidence of NF, patient comorbidities, body mass index (BMI), length of stay, and mortality rates were analyzed.
Results: Fifty-nine cases of NF requiring surgical debridement were identified: 14 pre-pandemic, eight during pandemic, and 37 post-pandemic. Incidence rates of NF increased significantly from 0.77 cases/100 000 person-years to 2/100 000 (p=0.0025). Prior to the pandemic, the median age was 49 years (Interquartile range [IQR] 15.75), increasing to 57 years (IQR 17) post-pandemic. The proportion of males increased from 42.9% to 64.9% (p=0.13); comorbid type 2 diabetes mellitus increased from 42.8% to 56.8% (p=0.28). BMI was 37.6±9.6 across pre- and post-pandemic cohorts, while the percentage of patients with BMI >35 increased from 42.8% to 59.5% (p=0.23). Post-pandemic mean length of stay increased from 25.3 to 44.5 days (p=0.016), and mortality rate increased from 13% to 19% (p=0.53).
Conclusions: In the three years following the end of COVID-19 restrictions, we saw nearly a 2.6-fold increase in NF diagnoses when compared to the three years prior to the pandemic. These findings support an increased incidence rate of NF in Newfoundland and Labrador.
Acknowledgements: The authors wish to thank Orla Ring, BNRN, for compiling the surgical debridement cases. 2025 Faculty of Medicine Summer Undergraduate Research Award (SURA).

MP 10.5
A scoping review of patient-reported outcome measures in female urology

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Introduction: Patient-reported outcome measures (PROMs) are essential tools that are developed to assess symptom burden, guide decision-making, and determine treatment effectiveness. Conditions such as stress urinary incontinence (SUI), overactive bladder (OAB), pelvic organ prolapse (POP), and interstitial cystitis and bladder pain syndrome (IC and BPS) all benefit from the use of PROMs to capture patient experiences, and when used correctly and consistently, can guide disease management. This scoping review summarizes and evaluates PROMs used in female urology, identifying strengths, gaps, and opportunities for improvement.
Methods: MEDLINE and Google Scholar were searched for studies involving adult women with SUI, OAB, POP, or pelvic pain that incorporated validated PROMs assessing symptoms, quality of life, sexual function, or global impression of improvement. Non-English publications, case reports, and editorials were excluded. Data were organized using Covidence and synthesized descriptively by condition and PROM category.
Results: A total of 172 abstracts were screened in Covidence, of which 32 full-text articles underwent eligibility review, and 18 studies were included in the final data extraction. A broad set of validated PROMs was identified across all major female urologic conditions. Persistent gaps included limited sexual health measures, redundancy among symptom severity tools, and inconsistent cross-cultural validation.
Conclusions: Many PROMs are available in female urology. There are some concerns regarding redundancy, domain inconsistency, and limited patient-centered assessment, which offer opportunities for innovation. Future development should emphasize standardization on disease conditions, improved cultural adaptation, and incorporation of patient-defined goals to better align outcome measurement with contemporary clinical practice.

MP 10.6

Vagina-sparing metoidioplasty: Technique and outcomes

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Introduction: Just over a quarter (25.6%) of transgender individuals identify as gender non-binary. While transgender healthcare has advanced significantly, specific medical and surgical options for gender non-conforming individuals are poorly described in the literature. Data on expected outcomes are lacking for vagina-sparing metoidioplasty (VSM). We report our multi-institutional experience with VSM.

Methods: We conducted a multi-institutional retrospective chart review of 67 patients undergoing VSM from 2020–2024 at three institutions. Demographic information, operative details, and complications were reported in comparison to those reported in available literature.

Results: A total of 67 patients were included, with a mean age of 32.56 years (range 19–64) and mean BMI of 26.1 (range 18.2–38.3). Thirty-six percent were current or former smokers, and 31% reported marijuana use. Urethral lengthening was performed in 43 patients (64%), of whom 33 (77%) had simultaneous urethral hookup. Testicular implants were placed in 14 patients (21%). Mean operative time was 160 minutes (range 66–423), with a mean estimated blood loss of 99 mL (range 10–450). Median length of hospitalization was 1.19 days (range 0–3). Postoperative complications included urethral fistula in 14 patients (33%), urethral stricture in two patients (5%), introital stenosis in five patients (7%), and testicular implant migration in seven patients (50% of those with implants). Of all urethral fistula patients, 12 were present in those who had received urethral hookup and two were present in those without hookup (Table 1).

Conclusions: Vagina-sparing metoidioplasty is a surgical option for non-binary patients with acceptable outcomes. There is an increased risk of fistula if urethral lengthening with hookup is performed. With 67 patients, this is the largest series describing vagina-sparing metoidioplasty.

MP 10.6. Table 1. Baseline characteristics and outcomes

Total patients	67
Age, years, mean (range)	32.56 (19,64)
BMI, kg/m^2, median (IQR)	26.1 (18.2, 38.3)
<25.0 (%)	32 (48%)
25.0–30.0 (%)	20 (30%)
>30.0 (%)	15 (22%)
Race/ethnicity (%)	
White	50 (75%)
Other	17 (25%)
Comorbidities (%)	
Smoking status (ex/current)	24 (36%)
Marijuana use	21 (31%)
Other drug use	2 (3%)
Concomitant surgery (%)	
Urethral lengthening (UL)	43 (64%)
UL with hookup	33 (77%)
UL without hookup	10 (23%)
Testicular implants	14 (21%)
Intra/perioperative data	
Estimated blood loss, mL, mean (range)	99 (10, 450)
Operative time, minutes, mean (range)	160 (66, 423)
Length of hospitalization, days, mean (range)	1.19 (0, 3)
Complications (%)	
Urethral fistulas	14 (33%)
UL with hookup	12 (36%)
UL without hookup	2 (6%)
Urethral stricture	2 (5%)
Introital stenosis	5 (7%)
Testicular implant migration	14 (50%)

MP 10.7

Long-term comparison of the use of peritoneal flap and sigmoid in revision vaginoplasty for vaginal stenosis in gender-affirming cases

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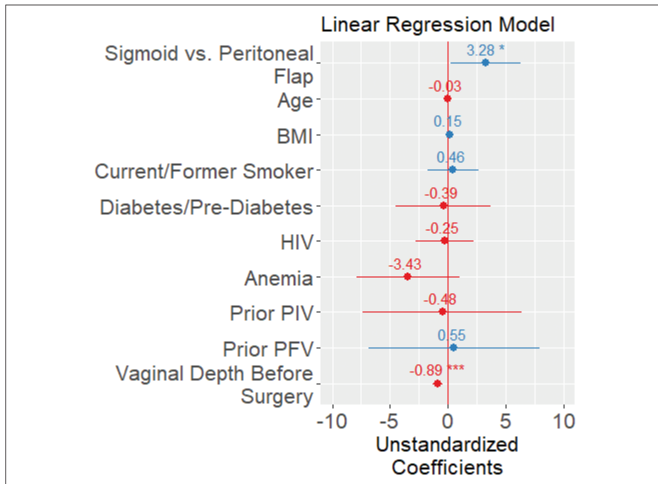
Introduction: Vaginal stenosis after gender-affirming vaginoplasty is a known complication associated with decreased functionality and satisfaction rates. Revision vaginoplasty options include peritoneal flap (PFV) and sigmoid vaginoplasty (SV), but data on the optimal technique to correct stenosis are lacking. We compared the two surgical procedures to have a better understanding of their outcomes and improve patient counseling.

Methods: A single-institution, retrospective chart review was conducted between 2020 and 2024. All patients who underwent revision vaginoplasty due to vaginal stenosis were included. Information such as demographics, intraoperative data, complication profile, and subjective outcomes were collected.

Results: A total of 42 patients underwent revision vaginoplasty. Eighteen patients underwent PFV, while 24 patients underwent SV. Baseline demographics were similar between the two cohorts except for ethnicity. PFV was associated with lower estimated blood loss and a shorter hospitalization; however, functional outcomes were similar between the two cohorts. Return of bowel function, complication profile, satisfaction rates, and sexual activity were equal. SV was associated with a longer vaginal canal, with a mean 3.28 cm increase over depth compared to PFV when controlling for all other variables (Figure 1, Tables 1–4).

Conclusions: Both PFV and SV are viable options for revision vaginoplasty after vaginal stenosis in gender affirming cases. They have similar complication profiles and functional outcomes; however, the SV is associated with an increased vaginal canal depth.



MP 10.7. Figure 1.

MP 10.7. Table 1. Baseline characteristics

	Total patients (N=42)	Peritoneal flap vaginoplasty (n=18)	Sigmoid vaginoplasty (n=24)	p
Demographics				
Age, year, median (IQR)	34.50 (26.25, 49.25)	41.50 (27.25, 53.25)	34.00 (26.50, 41.75)	0.133
BMI, kg/m^2, median (IQR)	26.75 (23.07, 30.70)	26.75 (24.00, 30.05)	26.33 (20.75, 31.12)	0.593
Race/ethnicity (%)				
White	17 (40.5)	9 (50.0)	8 (33.3)	0.440
Black	13 (31.0)	6 (33.3)	7 (29.2)	1.000
Hispanic	2 (4.8)	2 (11.1)	0 (0.0)	0.178
Other	10 (23.8)	1 (5.6)	9 (37.5)	0.026*
Comorbidities (%)				
HIV	12 (28.6)	4 (22.2)	8 (33.3)	0.506
DM	3 (7.1)	2 (11.1)	1 (4.2)	0.567
Smoking status	13 (31.0)	7 (38.9)	6 (25.0)	0.531
Prior vaginoplasty (%)				
Penile inversion	35 (83.3)	17 (94.4)	18 (75.0)	0.209
Peritoneal flap	6 (14.3)	0 (0.0)	6 (25.0)	0.029
Minimal depth	1 (2.4)	1 (5.6)	0 (0.0)	0.429
Concomitant surgery (%)				
Urethral fistula	4 (9.5)	0 (0)	4 (16.7)	0.122
Introitoplasty	28 (66.7)	10 (55.6)	18 (75.0)	0.321
Urethroplasty	17 (40.5)	10 (55.6)	7 (29.2)	0.160
Clitoroplasty	30 (71.4)	15 (83.3)	15 (62.5)	0.257
Monsplasty	5 (11.9)	3 (16.7)	2 (8.3)	0.636

MP 10.7. Table 2. Intraoperative data and perioperative course

Intraop data, median (IQR)				
Surgery length, min	203.00 (180.25, 250.25)	195.50 (181.75, 245.50)	204.00 (177.25, 245.25)	0.585
EBL, cc	100.00 (35.00, 150.00)	30.00 (21.25, 87.50)	100.00 (71.25, 200.00)	**0.002**
Followup, days	321.50 (60.50, 593.50)	346.00 (66.00, 765.25)	275.50 (77.50, 520.00)	0.567
Hospital course				
Length of stay, days, median (IQR)	3.00 (2.00, 4.00)	2.00 (2.00, 3.00)	4.00 (3.00, 4.00)	**0.001**
Return to bowel function, days, median (IQR)	3.00 (2.00, 3.00)	2.50 (1.00, 3.75)	3.00 (2.00, 3.00)	0.615

Bolded values indicate statistical significance.

MP 10.7. Table 3. Complication rates in PFV and SV cohorts

Complications (%)				
Clavien-Dindo (1–3)	23 (54.8)	10 (55.6)	13 (54.2)	1.000
Pain with dilation	16 (38.1)	5 (27.8)	11 (45.8)	0.338
Bothersome vaginal discharge	7 (16.7)	4 (22.2)	3 (12.5)	0.438
Post-op vaginal stenosis	11 (26.2)	3 (16.7)	8 (33.3)	0.299
Urethral stenosis	0 (0.0)	0 (0.0)	0 (0.0)	1
Prolapse	0 (0.0)	0 (0.0)	0 (0.0)	1.00
Wound dehiscence	7 (16.7)	2 (11.1)	5 (20.8)	0.679
Granulation tissue	11 (26.2)	8 (44.4)	3 (12.5)	**0.033**
Revision surgery after revision vaginoplasty	14 (33.3)	5 (27.8)	9 (37.5)	0.742

Bolded values indicate statistical significance.

MP 10.7. Table 4. Functional outcomes and depth results

Functional outcomes (%)				
Satisfaction	37 (88.1)	16 (88.9)	21 (87.5)	1.000
Sexually active	24 (57.1)	8 (44.4)	16 (66.7)	0.211
Vaginal depth (median (IQR)) cm				
Pre-revision depth	5.08 (2.54, 6.35)	6.35 (5.40, 8.89)	3.17 (0.00, 6.35)	**<0.001**
Post-revision depth	17.15 (15.24, 19.05)	15.24 (12.70, 16.51)	17.78 (16.51, 20.32)	**0.001**
Depth gained	11.43 (8.89, 16.19)	7.62 (6.35, 10.16)	14.61 (11.43, 17.78)	**<0.001**

Bolded values indicate statistical significance.

MP 10.8

Four-year outcomes from the ROBUST III study of the Optilume® drug-coated balloon for recurrent anterior urethral strictures

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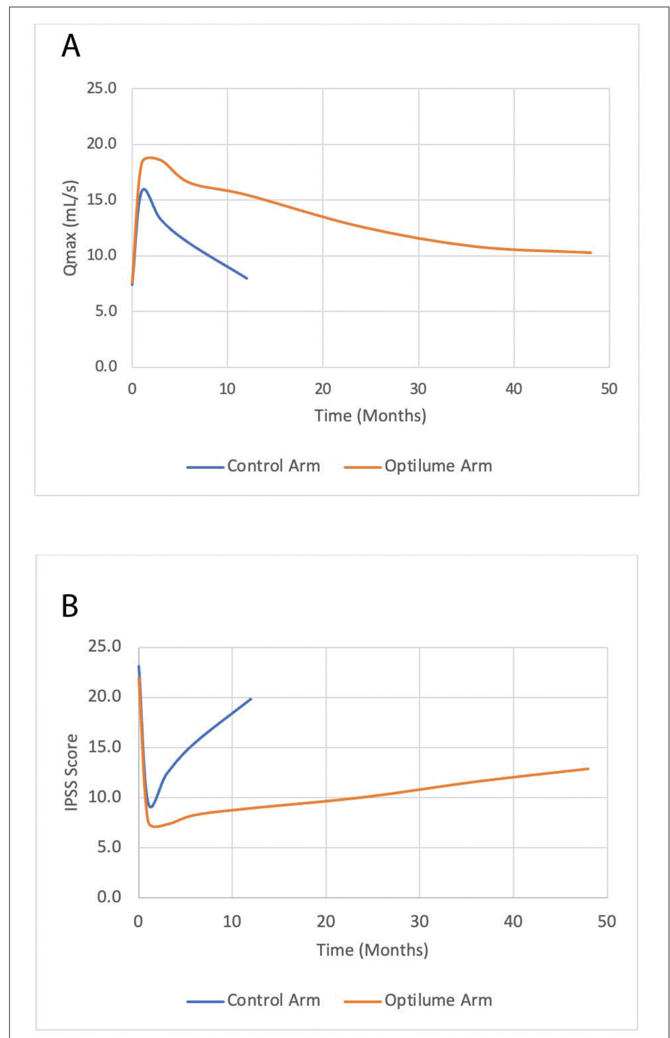
Introduction: The ROBUST III study is a randomized controlled trial comparing the Optilume® drug-coated balloon (DCB) against direct visual internal urethrotomy (DVIU) or dilation. The Optilume® DCB is a dilation balloon with a paclitaxel coating that combines mechanical dilation for immediate symptomatic relief with local drug delivery to maintain urethral patency. Outcomes after four-year followup are presented here.

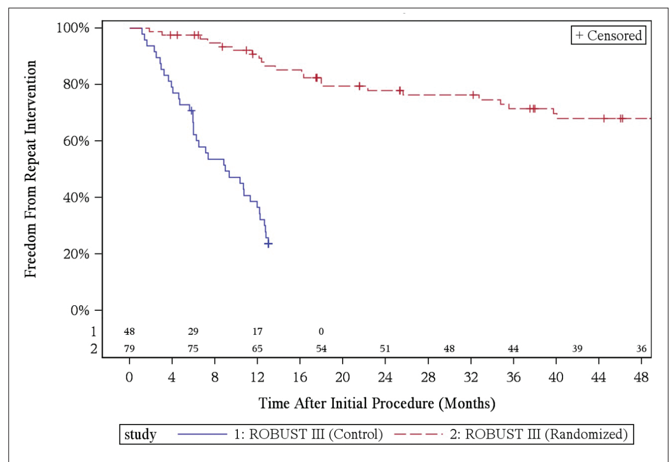
Methods: A total of 127 subjects were randomized in a 2:1 fashion at 23 sites. Seventy-nine were treated with the DCB and 48 were treated with DVIU or dilation. Followup past one year was limited to those treated with the DCB. Eligibility criteria included adult males with anterior strictures with ≥2 prior treatments and stricture length ≤3 cm. Long-term endpoints included freedom from repeat treatment, International Prostate Symptom Score (IPSS), and peak urinary flow rate (Qmax).

Results: Subjects randomized to receive the DCB had an average of 3.2 prior treatments and average stricture length of 1.6 cm (46% ≥2 cm), with 8/79 (10.1%) having penile strictures and 9/79 (11.4%) having prior pelvic radiation. IPSS significantly improved from 22.0 at baseline to 12.9 at four years (Figure 1). Qmax significantly improved from a baseline of 7.6 mL/sec to 10.3 mL/sec at four years (Figure 1). Freedom from repeat intervention for DCB subjects was estimated to be 68% (Figure 2). No late-onset treatment-related adverse events were observed.

Conclusions: The Optilume® DCB continues to achieve significant improvements in symptoms, flow, and reintervention rates through four years post-treatment.



MP 10.8. Figure 1. (A) Peak urinary flow rate (Qmax) over time. (B) International Prostate Symptom Score (IPSS) over time.



MP 10.8. Figure 2. Freedom from repeat treatment with number of subjects at risk.

MP 10.9

Real-world outcomes of Optilume drug-coated balloon treatment for urethral stricture disease: A Canadian tertiary care experience

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Introduction: Urethral stricture disease affects approximately 0.9% of men in North America and significantly impacts quality of life. The Optilume Paclitaxel drug-coated balloon (DCB) is a novel therapy that dilates the stricture while delivering paclitaxel to prevent fibrosis and recurrence. Real-world data on efficacy, complications, and predictors of failure, particularly in Canadian patients, remain limited.

Methods: A retrospective review was performed of patients who underwent DCB treatment for urethral stricture disease at a tertiary care center, with a minimum of one year followup. Baseline demographics, stricture characteristics, postoperative outcomes, and complications were collected. The primary endpoint was treatment efficacy, defined as the absence of repeat intervention. Logistic regression analyses were conducted to identify predictors of treatment failure.

Results: A total of 111 male patients met inclusion criteria, with a mean followup of 16.9 months (range 12.2–41.9). The mean age was 53 years. Nine patients (8.1%) had no prior treatment, 91 (82.0%) had undergone prior endoscopic treatments, and 14 (12.6%) had undergone urethroplasty. Among patients treated endoscopically, 37.8% had ≥5 prior treatments. The majority (75.6%) had bulbar urethral strictures, with an average stricture length of 2.21±1.2 cm. The most common stricture etiologies were idiopathic (45.9%), iatrogenic (30.1%), traumatic (12.6%), infectious (5.4%), hypospadias-related (4.5%), and lichen sclerosis (1.8%). Overall efficacy was 73.8%, with treatment failure observed in 29 patients (26.1%) at a mean time to re-treatment of 11.9 months. Of 14 patients with prior urethroplasty, 10 (74.1%) required no repeat treatment. The mean change in Qmax was +7.2 mL/s. Multivariate logistic regression identified non-bulbar urethral strictures as a significant predictor of treatment failure (OR 6.5, 95% CI 1.49–31.77, p=0.015). In subgroup analysis of patients with prior endoscopic

treatment, having ≥5 prior endoscopic procedures was an independent predictor of treatment failure (OR 3.9, 95% CI 1.45–10.5, p=0.007).
Conclusions: Repeat intervention was not required in 73.8% of patients treated with DCB over an average followup of 16.9 months. Non-bulbar strictures and ≥5 prior endoscopic treatments were significant predictors of failure. These findings may aid in preoperative prognostication and patient counseling.

MP 10.10
The utility of autologous tunica vaginalis graft repair on varying testicular pathologies

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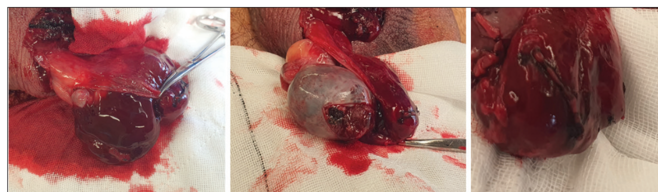
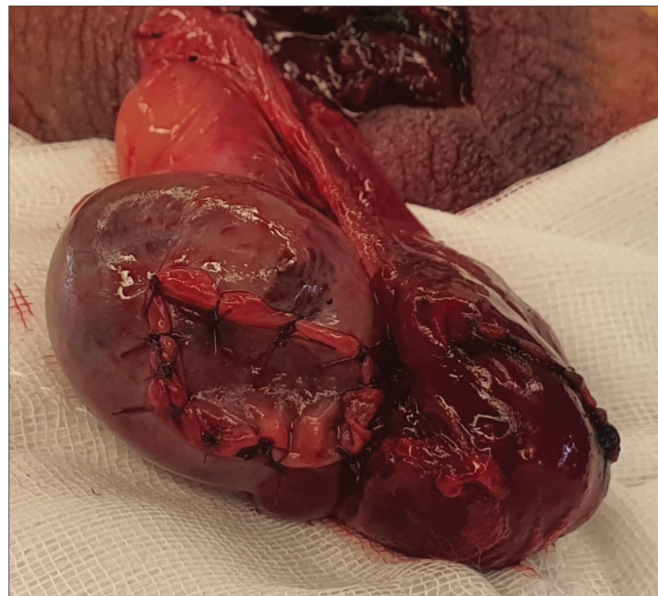
Introduction: The use of tunica vaginalis grafts has been described as a potential benefit in patients with varying testicular pathologies. This includes in testicular compartment syndrome secondary to torsion or epididymo-orchitis and for patients with large defects and difficult primary closure after testicular rupture. We describe our experience with the use of a tension-free autologous tunica vaginalis graft repair (aTVGR) and demonstrate its versatility and applicability.
Methods: We conducted a retrospective, single-center case series of two surgeons. Sixty-eight patients underwent scrotal exploration between April 2017 and February 2021. Eleven participants were included in this case series. Patient demographics, clinical history, and indications were collected retrospectively (Tables 1, 2). Written consent was obtained for the use of intraoperative images. All patients had postoperative followup at two and six weeks, with repeat ultrasound.
Results: Eleven patients underwent TVGR: 6/11 (55%) for ruptured testicular tunica albuginea following blunt trauma (Figure 1), and 3/11 (18%) for epididymo-orchitis-induced testicular compartment syndrome with postoperative ultrasound confirming good flow. Two of 11 (27%) were re-do scrotal explorations for ischemia following primary repair of ruptured testicle. Three of 11 had minor postoperative complications at six weeks but had flow, and there were no cases of testicular atrophy (Figures 1–3).
Conclusions: Autologous TVGR is a safe and viable management solution for the treatment of testicular compartment syndrome of varying etiology.

MP 10.10. Table 1. Patient demographics

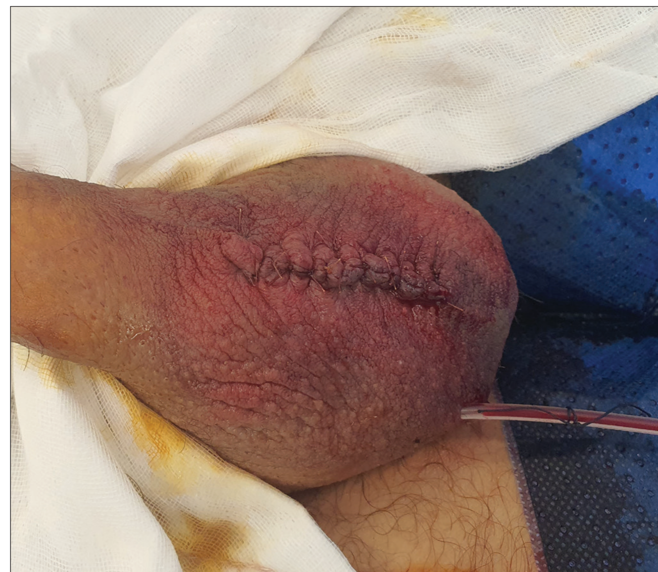
No of patients	11
Age	32.2 (20-59)
Weight BMI <30 BMI >30	 9 (81.8%) 2 (18.2%)
Smoking Yes No Ex-smoker	 4 (36.4%) 6 (54.5%) 1 (9.1%)
Diabetes Yes No	 0 (0%) 11 (100%)
Anticoagulation Yes No	 0 (0%) 11 (100%)
Comorbidities >2 ≥2	 9 (81.8%) 2 (18.2%)



MP 10.10. Figure 1. Delivery and definition of testicular rupture.



MP 10.10. Figure 2. Tension-free TVGR.



MP 10.10. Figure 3.

MP 10.10. Table 2. Perioperative information	
Previous scrotal exploration	
Yes	2 (18.2%)
No	9 (81.8%))
Mechanism of injury	
Blunt trauma	6 (54.5%)
Torsion	3 (27.3%)
Epididymitis	2 (18.2%)
Post op antibiotics	
Cephalexin (Kelfex)	4 (36.4%)
Amoxicillin-clavulanate (Augmentin DF)	6 (54.5%)
Other	1 (9.1%)
Followup timeframe	
<4 weeks	2 (18.2%)
≥4 weeks	9 (81.8%)

MP 10.11

Applying advanced prompt engineering techniques to generative artificial intelligence models for analyzing diagnostic quality in retrograde urethrogram images

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Introduction: Retrograde urethrograms (RUGs) are the primary imaging modality for evaluating urethral stricture disease, but diagnostic quality varies due to technical and anatomical factors. Conventional artificial intelligence (AI) image analysis requires large datasets, which is costly and time-intensive. Advanced prompting of generative AI models may offer a faster alternative. Our objective was to evaluate the effectiveness of advanced prompting for accurate RUG quality assessment.

Methods: We reviewed a random sample of 233 RUGs from 2010–2024 at a tertiary center. De-identified RUG images were labeled by a reviewer as diagnostic or non-diagnostic, with classifications verified by a reconstructive urologist. The labeled dataset was used to evaluate a generative pretrained transformer (GPT)-4o AI model for automated RUG quality assessment. Using advanced prompting (multishot, negative, chain-of-thought), we developed a GPT-based tool to classify each RUG as diagnostic or non-diagnostic with reasoning. To assess performance, 75 randomly selected RUGs were analyzed under two conditions: 1) with advanced prompting; and 2) without any prompting (unprompted baseline).

Results: Mean age at RUG was 52.52±18.50 years. Based on reviewer assessment, 164/233 (70.4%) studies were diagnostic and 69/233 (29.6%) non-diagnostic. The prompted model achieved first-pass accuracy of 53/75 (70.7%) and improved to 61/75 (81.3%) after an unguided "try again" prompt (Table 1). False-positives occurred in 12/75 (16.0%) and false-negatives in 10/75 (13.3%). The unprompted model reached 33/75 (44.0%) accuracy, with 8/75 (10.7%) false-positives and 34/75 (45.3%) false-negatives.

Conclusions: Advanced prompting improves the model's ability to assess the diagnostic quality of RUGs, primarily by reducing false-negatives. Future refinements, like a mixture-of-experts approach, where specialized GPT agents evaluate quality factors and report to a main model, can enhance accuracy and reliability.

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MP 10.11. Table 1. Accuracy and error rates of prompted vs. unprompted AI models for diagnostic RUG classification (n=75)

Metric	Prompted (1st pass)	Prompted ("try again")	Unprompted model
Accuracy	53 (70.7%)	61 (81.3%)	33 (44.0%)
False-positives	12 (16.0%)	11 (14.7%)	8 (10.7%)
False-negatives	10 (13.3%)	3 (4.0%)	34 (45.3 %)

MP 10.12

Long-term outcomes of augmentation enterocystoplasty in adults

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Introduction: Augmentaton enterocystoplasty (AE) is an established surgical intervention for the management of refractory reduced bladder capacity. We aimed to determine long-term outcomes of patients after AE with at least 10 years of followup.

Methods: A retrospective chart review was done of all patients who underwent AE from 1982–2015. Workup included cystoscopy, urodynamics, upper tract imaging, and lab assessment. The need for simultaneous ureteral reimplant(s), continence procedure, and/or continent catheterizing channel (CCC) was determined preoperatively. AE incorporated detubularized bowel into a widely opened bladder. If the urethra was not functional or usable for intermittent catheterization (IC), CCC was done at the time. Reintervention rates were determined.

Results: A total of 115 patients (71 women, 44 men) underwent AE at a median age of 32 years (IQR 25.6–45.8). Neurologic diagnoses were spina bifida (n=42), spinal cord injury (n=30), and other neurologic (n=18). Non-neurologic etiologies were radiation (n=11), pelvic surgery/trauma (n=11), and bladder exstrophy (n=3). Twelve patients underwent undiversions from ileal conduits. Bowel segments included colon (n=13) and ileum (n=102). Fifty-six patients had AE alone, and 59 (48 females and 11 males) had CCCs. Ureteral reimplants were done in 27 patients. Continence procedures were done in 54 females (28 slings, 15 slings with tapered bladder necks [BN], and BN closure in 11), and 30 males (20 slings with BN tapering, six slings, and four BN closures). Patients were followed for a median of 17.2 years (IQR 13.3–23.8). Mean bladder capacity increased from 206 ml to 522 ml ($p<0.05$). Mean pressure at capacity decreased from 42 cm of H2O to 14 cm of H2O ($p<0.05$). Seventy patients (61%) required reintervention (Clavien-Dindo grade 3). Endoscopic procedures included bladder stones (30), DVIU (n=5); open surgery BN revision/closure ± conversion to CCC (n=8), CCC/parastomal hernia revisions (n=15), and ileal conduit (n=8). At last followup, 89 patients were socially continent with CIC or voiding (n=3), while 14 had indwelling catheters or ileal conduits. Urothelial cancers (UC) developed in seven (6%) at a median of 15 years (IQR 10.3–19.6). Successful term pregnancies (two vaginal and two C-sections) were seen in four women. There were 19 (16.5%) deaths (including the seven with UC) at a median of 18.34 years (IQR 11.4–22.6).

Conclusions: Ten years or longer followup after AE reveals a high continence rate and significant improvement in storage parameters. Despite a high reoperation rate, AE with or without other reconstructive procedures is effective for intractable reduced-capacity bladder. Because of potential complications, including the development of UC, long-term followup is mandatory.

MP 10.13

Beyond conventional repair: Engineering personalized urethral substitutes

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Introduction: Urethral anomalies often require surgical reconstruction. When the foreskin is unavailable, buccal mucosa remains the gold standard, but its limited availability and donor-site morbidity highlight the need for new solutions. Despite extensive exploration of biomaterial-based, tissue-engineered substitutes, most remain limited by poor tissue specificity and insufficient mechanical performance. Our team previously developed a self-assembled urethral substitute using bladder and dermal cells without exogenous biomaterials; however, this model required multiple biopsies and displayed suboptimal strength. In this study, we aimed to design a fully autologous and organ-specific urethral substitute, hypothesizing that constructs made exclusively from urethral fibroblasts (UF) and urethral urothelial cells (UUC) could provide superior biological relevance, mechanical robustness, and simplified reconstruction.

Methods: UF and UUC were isolated from human urethral biopsies (n=8). Using the self-assembly technique, UF were cultured in vitro in the presence of ascorbic acid to generate sheets that were subsequently stacked together to form a stromal layer, on which UUC were seeded. After air-liquid interface culture for epithelial maturation, the tissues underwent histology (Masson's trichrome), immunofluorescence, scanning electron microscopy (SEM), permeability, and mechanical testing.

Results: The UF-UUC constructs closely replicated the native urethral structure, displaying a well-differentiated pseudostratified columnar urothelium. Immunofluorescence confirmed urothelial marker expression, and SEM revealed superficial umbrella cells with uroplakin-positive apical coverage. The low permeability demonstrated functional epithelial integrity, while mechanical testing showed clinically relevant mechanical properties and confirmed surgical-grade strength and handling.

Conclusions: We report, for the first time, the successful reconstruction of a fully autologous, organ-specific human urethral substitute generated without any exogenous biomaterial. This novel and unique model represents a major advancement in urethral tissue engineering, with direct translational potential for clinical urethroplasty. Preclinical in vivo evaluation in animal models is currently underway to pave the way toward future clinical application.

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MP 10.14

An optimal engineered construct for trans-affirmative vaginoplasty

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Introduction: Gender-affirming surgery (GAS) significantly improves psychological well-being in transgender individuals. In male-to-female (MTF) patients, vaginoplasty usually employs penile skin inversion, but the keratinized, dry, and heterotopic nature of this tissue often leads to complications. To address these limitations, we developed a tissue-engineered vaginal substitute using cells from the fossa navicularis (FN), a region of the distal male urethra sharing embryologic origins and key features with vaginal epithelium, including glycogenation, lubrication, and pathogen resistance. We further explored the use of allogenic vaginal fibroblasts to enhance construct functionality.

Methods: FN epithelial cells and fibroblasts were isolated from biopsies of 14 MTF patients (ages 19–71) undergoing vaginoplasty. Enzymatic digestion protocols using dispase or thermolysin and collagenase ± elastase were compared to optimize cell yield. FN fibroblasts cultured with 2-phospho-L-ascorbate produced cell-assembled matrix sheets that were stacked to form stroma. FN epithelial cells were seeded, cultured submerged for one week, and at the air-liquid interface for three weeks to promote differentiation. Constructs using vaginal fibroblasts and/or estradiol supplementation were compared to vaginal and urethral controls. All constructs were grafted on silicone stents and implanted subcutaneously in nude mice. Histologic and immunophenotyping analyses included Masson's Trichrome, PAS, and epithelial markers.

Results: Dispase and collagenase + elastase yielded optimal cell recovery. FN constructs formed stratified squamous epithelia with glycogenation and estrogen receptor expression, resembling vaginal mucosa. Vaginal fibroblast scaffolds enhanced vaginal marker expression (keratin 10, mucin 1), while estradiol increased stromal thickness and improved epithelial differentiation. In vivo, constructs maintained morphology and p63+ basal stem cell populations.

Conclusions: Autologous FN-derived epithelia combined with allogenic vaginal fibroblasts offer the most promising, biologically relevant substitute for vaginoplasty, particularly in patients with limited penile tissue due to puberty blocker use, potentially improving long-term surgical outcomes.

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MP 10.15

Comparative analysis of recurrence-free intervals for endoscopic and surgical reconstruction modalities for vesicourethral anastomotic stenosis: A single-center, retrospective cohort study

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Introduction: Vesicourethral anastomotic stenosis (VUAS) is a complicated condition following radical prostatectomy, posing a management challenge. Despite multiple available interventions, data on long-term outcomes and comparative effectiveness across modalities remain limited. Therefore, this study demonstrates the recurrence-free intervals and retreatment rates among commonly used endoscopic, reconstructive, and novel (Optilume) modalities in patients undergoing treatment for VUAS.

Methods: A retrospective chart review was conducted that included patients treated for VUAS at TBRHSC from 2018–2025 (ongoing). Treatment modalities included urethral dilation, incision, incision with triamcinolone injection, buccal mucosal graft urethroplasty (BMG), Optilume (drug-coated balloon dilation), and abdomino-perineal reconstructive surgery. The median number for procedures, recurrence-free (RF) intervals, and retreatment rates were analyzed.

Results: A total of 62 patients with median age of 72 years were included. Of these, 43 (69.4%) patients were recurrence-free and 19 (30.6%) patients reported needing further treatment. Across all treatment modalities, the recurrence-free group underwent a median of two treatments, whereas patients requiring additional intervention had a median of three treatments (Table 1). For each modality, the median number of treatments, average recurrence-free intervals, and retreatment rates varied (Table 2). Dilation showed the shortest recurrence-free interval (46 days), with a high retreatment rate of 94.1%. Incision alone and incision with triamcinolone injection demonstrated improved recurrence-free interval (281 and 284 days, respectively) with retreatment rates of 83.6% and 53.3%,respectively. In addition, Optilume had 30% retreatment rate at median followup of 797 days. Furthermore, BMG urethroplasty showed a retreatment rate of 16.7% (median followup 1,287 days) and two patients underwent abdomino-perineal reconstructive surgery and remained recurrence-free at a median followup of 1800 days.

Conclusions: Endoscopic management, particularly dilation, is associated with high recurrence and retreatment rates. The addition of triamcinolone injection with incision modestly improves outcomes, while reconstructive procedures, such as BMG urethroplasty, provide the most durable results. Optilume shows

promising mid-term outcomes and may represent a minimally invasive alternative before definitive surgical repair; however, longer followup is warranted to assess long-term efficacy.

Acknowledgements: This abstract was presented as a moderated poster at GURS 2025.

MP 10.15. Table 1. Summary of patient cohort treated for VUAS

Variable	Total cohort	Recurrence-free group	Ongoing treatment group
Total patients (n)	62	43	19
Median number of interventions		2	3
Range of interventions		1–6	1–8

MMP 10. 15. Table 2. Different VUAS modalities along with their retreatment rates

VUAS modalities (no. of patients)	Median no. of treatments (range)	Average recurrence-free (days)	Retreatment rate (%)	No. of patients who are currently recurrence-free (median followup days)
Dilations (n=51)	2 (1–5)	46	94.1%	3 2175 days
Incision (n=55)	1 (1–2)	281	83.6%	8 1455 days
Incision + Triamcinolone inj. (n=15)	1 (1–2)	284	53.3%	7 1593 days
BMG (n=6)	1 (1–1)	1 patient failed: 377 days	16.7%	5 1287 days
Optilume (n=10)	1 (1–2)	3 patients failed: 1 —> Technical error 2 —> 196 days 3 —> 416 days	30%	7 797 days
Abdomino-perineal surgical repair (n=2)	2 patients	–	0%	2 1800 days